U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety Research and Development Program
Broad Agency Announcement #DTPH56-05-BAA-0001

U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Office of Contracts and Procurement, PHA-30, Room 7118, 400 7th St., SW, Washington, DC 20590
Pipeline Safety Research and Development – Pipeline Damage Prevention, Mechanical Damage, Direct Assessment, Inspection, Leak Detection, Design in support of Pipeline Safety Improvements, and Other Safety Improvements. DTPH56-05-BAA-0001, due July 5, 2005, POC Carla Cuentas, Contract Specialist, Phone: 202-493-0556, Fax 202-366-7974, Email: Carla.cuentas@dot.gov. For questions or problems with the Registration or Application of the Web Site, please email Randy Pearson at: RDsupport@cycla.com.
CONTACT INFORMATION: Through this Broad Agency Announcement (BAA), the U.S. Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS) is soliciting information on cost-shared activities that offer practical solutions to improve the safety and integrity of the Nation's pipeline infrastructure. Interested parties must submit a separate white paper for each proposed individual project. Multiple projects should not be combined into a single white paper unless designed into a consolidated program. Each white paper must not exceed five pages and must include a description of the state-of-the-art in the area being proposed and actions proposed to advance that state with a quantifiable method to measure the improvement anticipated upon completion of the project. Each white paper must include the offeror's contact information: point of contact, organization name and complete street address, organization DUNS number, organization Tax Identification Number, telephone number, fax number and e-mail address. The complete submission package, including the White Paper (5 pages maximum), optional transmittal letter, and attachments, must not exceed fifteen pages.

SPECIAL NOTE: This announcement will be open through July 5, 2005 unless otherwise amended. The purpose of the BAA is to solicit research projects in certain program areas to assure the safety and integrity of the nation's gas and hazardous liquid pipeline network. A team of technical experts will review the white papers submitted in response to this announcement and submitters will be advised of the outcome and anticipated follow-up from the review as it is completed.

SCOPE: The PHMSA Office of Pipeline Safety (OPS) conducted a Government/Industry Pipeline R&D Forum in Houston, Texas on March 22 - 24, 2005. The 2.5 day event included approximately 185 representatives from Federal, State and international government agencies, public representatives, research funding organizations, standards organizations, and pipeline operators from the U.S. and Canada. The R&D forum led to a common understanding of current research efforts, a listing of key challenges facing government and industry, and a compilation of potential research areas whose exploration can help meet these challenges and should therefore be considered in the development of new R&D applications. Only topics described in this BAA and identified at the R&D forum will be addressed. Not all topics identified at the R&D forum fit within the mission of the OPS at this time and may not be represented in this BAA. Further details on the research topics identified can be found in the R&D forum proceedings and technical report-out presentations. To view the R&D forum proceedings and technical report-out presentations, please visit:
http://primis.phmsa.dot.gov/rd/mtg_032305.htm.

To gain a historical prospective of the OPS R&D research goals, strategy and several previous pipeline stakeholder events as well as descriptions of all awarded research, visit the OPS R&D Program webpage at http://primis.phmsa.dot.gov/rd/index.htm.

Measuring how research outputs are transferred to the end user is a top priority for OPS R&D Program. This BAA seeks research topics that: 1) Can produce results in the short-term (1-3 years), 2) Have progressed successfully past the proof of concept, 3) Contribute to the development of technology, strengthen consensus standards, or 4) Provide general knowledge for decision makers. A response to this BAA must 1) Clearly identify the ultimate goals of the proposed project; or 2) Contribute technology or knowledge to organizations that supply technology in the field or to organizations seeking to develop or update industry consensus standards.

The US DOT PHMSA is seeking white papers on individual projects and on consolidated R&D programs that address the following pipeline safety program areas. A consolidated R&D program white paper from the team lead organization should identify opportunities for integrated R&D that could involve contributions from several organizations whose combined expertise will contribute greater efficiency and effectiveness to R&D in the proposed program areas. Examples of program and project focus within the desired program areas are presented below. Details of the intent of the listed projects can be located in the R&D forum proceedings and technical report-out presentations, shown at: http://primis.phmsa.dot.gov/rd/mtg_032305.htm.

1. Damage Prevention

Technology development of avoidance sensors on digging/boring equipment - A project could identify current technologies to be refined or a new tool or avoidance sensor to be developed. As part of the R&D, end users of this technology should be identified and provide technical specifications to develop best practice guidelines and increase the chances that the research output will be applied. One Call procedures and pertinent insurance standards used by the pipeline industry could be factored to flow chart the entire process for the application of the technology.

2. Mechanical Damage

Enhance & validate Magnetic Flux Leakage (MFL) inspection technology for locating existing mechanical damage - A project could enhance assessment for qualitative screening and ranking of existing mechanical damage. Field validation under real operating conditions could be used to benchmark the application of this tool or method.

3. Direct Assessment

A. Identify, develop and demonstrate tools and techniques to fill the gaps and expand the applicability of External Corrosion Direct Assessment (ECDA) - A project could survey existing technologies for applicability and short term potential. Expand and demonstrate capability and reliability of the existing technologies identified without duplicating any existing efforts underway; or create new knowledge and technology to address the specific problem and capture applications in standard and/or recommended practice. In any event, submitted projects must contribute to expanding the range of applicability of ECDA and to the demonstration of the effectiveness of ECDA in these expanded areas.

B. Characterize the accuracy and range and applicability of Internal Corrosion Direct Assessment (ICDA) methods and characterize which models apply to what situations - A project could survey existing

technologies and methodologies for applicability, and develop protocols on how to apply ICDA methods. The candidate ICDA methods and protocols should lead (especially those focused on wet gas and liquids) to quantifying and validating the accuracy, applicability and functionality of the models evaluated. The project results can be incorporated into a standard and/or recommended practice.

C. Identify and develop practical approaches to characterize the impact of and reduce the number of uncertainties in Internal Corrosion Direct Assessment (ICDA) application - A project could pinpoint locations and optimize length of ICDA excavations. It could survey existing technologies and methodologies and applicability. The project could develop protocols, demonstrate ICDA methods (especially those focused on wet gas and liquids) and incorporate results into existing standards.

D. Identify, develop, demonstrate tools and techniques for expanding their applicability and ability to detect Stress Corrosion Cracking (SCC) - A project should survey existing technologies for applicability and short term potential. Expand and demonstrate capability and reliability of the existing technologies identified without duplicating any existing efforts underway; or create new knowledge and technology to address the specific problem and capture application in standard and/or recommended practice.

4. Inspection

A. Investigate fundamentals and performance characteristics of current sensor technologies - A project could identify current capabilities of many inspection technologies used in the pipeline industry. Currently there is a growing need to validate the data and assessment information captured during inline inspection while tying these results back to fundamentals and performance characteristics.

B. Developing inspection technologies for non-metallic pipelines - A project could identify current technologies available to inspect non-metallic pipe. Technology gaps identified could be used to develop technologies that will inspect these pipes in the methods and techniques similar to metallic pipelines.

5. Leak Detection

Enhancement of tools for computational pipeline monitoring - A project could identify how computational monitoring for leak detection can be enhanced through the development of new tools or methods. The project could incorporate technology development with best practice guidelines to maximize effectiveness.

6. Pipeline Design

A. Conduct testing to support a comprehensive set of design tools for pipeline strain based design - A project could provide engineering data to support and validate the existing government and industry research effort for strain based design. The current effort has drafted a comprehensive design standard for strain based design. Much of the guidance drafted from this research requires engineering data to support this standard.

B. Improve predictive tools for pipeline loading under large scale movement and adverse environmental conditions - A project could consider a comprehensive investigation to address all associated engineering issues. The current methodology for predicting loads on pipelines is not sufficient, particularly with regard to large scale ground movements and environmentally imposed loads. Further, the project could incorporate material and site property data to support application of predictive tools.

7. Other Safety Improvements

A. E-Communications – A project could work with public safety agencies, "One Call" centers, and the telecommunications industry to integrate voice, data, geospatial and graphical communications to enable common devices (cell phones, PDAs, computers, and others) to communicate effectively.

B. Human Factors - A project could discuss research on operator fatigue, human-centered systems, and man-machine interaction. Research topics of interest include technologies and procedures designed to minimize operator error, research on the effects of managing pipeline controller shift change and potential solutions for minimizing those effects, human interface in incident/accident management, and other portions of the pipeline operating system. An exisitng government and industry research should be coordinatded with to maximixe attainment of this topic's goal.

WHITE PAPERS: PHMSA is soliciting white papers on individual projects as well as consolidated R&D programs in support of the specified program areas. Each proposal must include a cost sharing contribution of at least fifty percent of the proposed project's cost in order to be considered. Each white paper must not exceed five pages and must include the following: 1) A description of the state-of-the-art in the area being proposed; 2) Actions proposed to advance that state with a quantifiable method to measure the improvement anticipated upon completion of the project; 3) Examples of past performance that demonstrate the ability of an offeror to compete further from white papers to proposals; and 4) Examples, if any, of prior awarded research with DOT. The entire White Paper submission package, including the White Paper itself (5 pages maximum), and all attachments, appendices and backup materials, must not exceed fifteen pages in total. The package must include the contact information previously described, and sufficient information to evaluate the following areas:
1. Offeror's understanding and description of the "state of the art" in the proposed research area.
The degree to which the offeror identifies the current status of the technology in the research area it is proposing to address, including previous work done by the offeror and others in the proposed R&D area and appropriateness of how the prior work relates to the proposed application of the technology. Adequacy and feasibility of the applicant's approach to achieving stated objectives.
2. Scientific and technical merit of proposal to advance pipeline safety.
The degree to which the proposed technology or methodology is based on sound scientific and engineering principles. The degree to which the proposal will advance pipeline safety, if the work is successful.
3. Adequacy and feasibility of technical approach and realism of cost estimate.
Appropriateness, rationale, and completeness of the applicant's technical approach. The adequacy of the proposed project schedule, staffing plan and planned travel to complete the proposed work. The realism of the cost estimate to meet objectives and deliver products in the proposed timeline. The likelihood that the proposed work will be successful and develop a new successful technology.
4. Technical experience and capabilities of the offeror in Federal research programs.
Credentials, capabilities and experience of key personnel. Demonstrated corporate experience of the applicant and participating organizations in managing similar projects that are similar to the proposal in size, complexity, and technology. The adequacy of the facilities and equipment to perform project tasks.
5. Timeline to implement proposed technologies or concepts into practice into the pipeline industry.
Overall potential timeline of the proposed technology to become an accepted commercial product if work is successful.
6. State of the application and coordination and collaboration with end users to implement proposed technologies or concepts into the pipeline industry. (Criteria to be used during full proposal evaluation only)
If applicable, the proposed research should identify whether the deliverable addresses technology or consensus standards. The offeror could include scope items that coordinate with standard organizations and or vendor technology organizations increasing the chance that project results will be applied or commercialized. Items

such as invitations to project meetings, providing copies of milestone reports and drafting project outputs in formats recognized with that organization are suggested. The offeror could provide clarity, logic and likely effectiveness of project organization including subcontractors to successfully complete the project.
7. As appropriate, information on capabilities of the lead company and other collaborators expected to participate in consolidated R&D Programs. (Criterion to be used during full proposal evaluation of Consolidated Programs only)
PHMSA is looking for the increased scientific and technical merit of the consolidated program itself versus that of its individual projects. We are looking not simply for project management assistance, but for the increased value added by adopting a more integrated approach to addressing a known technical challenge to pipeline safety. Therefore, successful proposals for consolidated programs will clearly articulate both how the individual technical projects interrelate and are sequenced to maximize the benefits. Such proposals will also clearly articulate how the proposed approach will deliver significantly greater improvements in either knowledge or technical solutions to clearly identified challenges than if these projects were pursued individually or in a different sequence; the adequacy and availability of the personnel, facilities and equipment to perform project tasks; and the demonstrated corporate experience of the applicant and participating organizations in managing similar projects.

All evaluation factors are of equal importance.

GENERAL INFORMATION: This BAA can be downloaded via the Internet at: http://www.phmsa.dot.gov/programs/contracts/procurement.html, under “Contract and Procurement Announcements.” The procedures for submitting White Papers are as follows: 1) Only Electronic submissions will be accepted. Hard copies will not be accepted; and 2) Prior to submitting a White Paper, each organization must first complete (electronically) a Registration Form which is available at http://primis.phmsa.dot.gov/matrix/RfpInfo10.rdm . All necessary additional instructions regarding the preparation and electronic submission of the White Papers along with individual questions and answers will be available on the website identified above. White Papers must be uploaded and are due by 5:00 P.M. EDT**,** July 5**,** 2005**.**

BROAD AGENCY ANNOUNCEMENT: This FedBizOps notice, in conjunction with further announcement details available from the PHMSA procurement site Internet address identified above, constitutes the BAA as contemplated by FAR 6.102(d)(2). A formal Request for Proposals (RFP) for other type of solicitation regarding this announcement will not be issued. No more than $500,000 in funding is expected to be awarded to any single research project. No more than $5,000,000 in funding is expected to be awarded over the life of the program described in this BAA. Additional levels of funding may be available if warranted with all funds contingent upon Congressional approval. A technical evaluation panel will review all white papers received for responsiveness to the evaluation areas stated in this BAA. Offerors providing white papers deemed worthy of further consideration and meeting the criteria of this BAA will be notified with possible suggestions for change in scope and detailed guidelines for submitting full proposals. Each full proposal must include a cost sharing contribution of at least fifty percent of the proposed project's total cost in order to be considered. No discussions will be held between an offeror and the Government's technical staff after submission of a white paper without the Contracting Officer's prior approval. It is DOT/PHMSA's desire to encourage the widest participation, particularly the involvement with universities and other academic institutions, as well as with individuals, corporations, non-profit organizations, small and small disadvantaged businesses, and State or local governments or other entities.